



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re patent application of:	)	Before the Examiner:
Charles L. Branch et al.	)	Pedro Philogene
	)	
Application Serial No.: 09/870,023	)	Group Art Unit: 3731
	)	
Filed: May 30, 2001	)	Ref. No.: MSDI-213/ PC365.05
	)	
INTERBODY FUSION GRAFTS	)	
AND INSTRUMENTATION	)	

**DECLARATION OF PRIOR INVENTION IN THE UNITED STATES  
TO OVERCOME CITED PATENT OR PUBLICATION (37 C.F.R. §1.131)**

We, Charles L. Branch, Mingyan Liu, Lawrence M. Boyd and Loic Josse, hereby declare as follows:

1. We are each listed as a joint inventor of the subject matter disclosed and claimed in the subject patent application (hereafter the "Invention").
2. The subject application claims priority to and is a divisional of U.S. Patent Application Serial No. 09/698,623 filed on October 27, 2000 and issued as U.S. Patent No. 6,610,065, which is in turn a divisional of U.S. Patent Application Serial No. 09/181,353 filed on October 28, 1998 and issued as U.S. Patent No. 6,174,311.
3. This Declaration is being provided to establish a date of conception and reduction to practice of the Invention in the United States on a date prior to August 3, 1998, which is the purported effective filing date of U.S. Patent No. 6,258,125 to Paul et al. that was cited in a non-final Office Action mailed to the Applicant on April 26, 2006 in the subject patent application.
4. On a date prior to August 3, 1998, the Invention was conceived of by the joint inventors.
5. On a date prior to August 3, 1998, the Invention was successfully reduced to practice in the United States.
6. To evidence conception and reduction to practice of the Invention, attached hereto is an Invention Disclosure that includes drawings and a description of the Invention which correspond to the subject matter disclosed and claimed in the subject patent application. The

dates listed on the Invention Disclosure have been blacked out, as well as dimensional data associated with the Invention. However, we declare that the "Date of Conception" and the "Date Constructed" occurred prior to August 3, 1998.

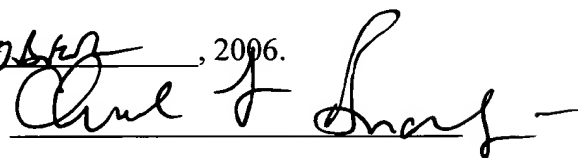
7. On a date prior to August 3, 1998 and shortly after the Invention was reduced to practice, the Invention was tested in the United States.

8. We declare that the "Date First Tested" listed on the Invention Disclosure occurred prior to August 3, 1998.

9. Shortly after construction and testing of the Invention, the Invention Disclosure was forwarded to the law firm of Woodard, Emhardt, Naughton, Moriarity & McNett for preparation of a patent application.

10. A patent application disclosing and claiming the Invention set forth in the Invention Disclosure was filed with the U.S. Patent and Trademark Office on October 28, 1998. (U.S. Patent Application Serial No. 09/181,353; issued as U.S. Patent No. 6,174,311).

WITNESS Declarant's hand this 16 day of October, 2006.



Charles L. Branch

WITNESS Declarant's hand this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

\_\_\_\_\_  
Mingyan Liu

WITNESS Declarant's hand this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

\_\_\_\_\_  
Lawrence M. Boyd

WITNESS Declarant's hand this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

\_\_\_\_\_  
Loic Josse

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WITNESS Declarant's hand this 18<sup>th</sup> day of October, 2006.

\_\_\_\_\_  
Charles L. Branch

WITNESS Declarant's hand this 18<sup>th</sup> day of October, 2006.

\_\_\_\_\_  
Mingyan Liu

WITNESS Declarant's hand this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

\_\_\_\_\_  
Lawrence M. Boyd

WITNESS Declarant's hand this 17 day of OCTOBER, 2006.

\_\_\_\_\_  
Loic Josse

dates listed on the Invention Disclosure have been blacked out, as well as dimensional data associated with the Invention. However, we declare that the "Date of Conception" and the "Date Constructed" occurred prior to August 3, 1998.

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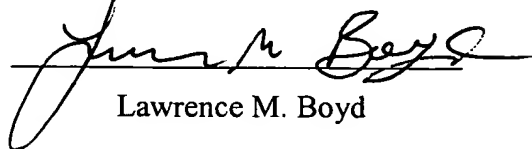
WITNESS Declarant's hand this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

\_\_\_\_\_  
Charles L. Branch

WITNESS Declarant's hand this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

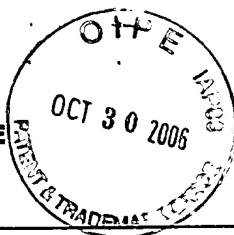
\_\_\_\_\_  
Mingyan Liu

WITNESS Declarant's hand this 19<sup>th</sup> day of October, 2006.

  
Lawrence M. Boyd

WITNESS Declarant's hand this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

\_\_\_\_\_  
Loic Josse

**INVENTION DISCLOSURE**Disclosure No. 00014

Project No. \_\_\_\_\_

Sheet 1 of 23

Title of Invention <b>Impacted Bone PLIF implant and instrumentation</b>			Project No. or Name		
Inventor(s) <b>Charles L. Branch, M.D., Mingyan Liu, Lawrence M. Boyd, Loic Josse</b>			Eng. Notebook No. & Pages		
Date Conceived [REDACTED]	Date Constructed [REDACTED]	Date First Tested [REDACTED]	Date Disclosed [REDACTED]		
<p>1. Describe what is new or different about the subject matter of this invention:</p> <p>Implant and instrumentation designs, which allow for a posterior lumbar interbody fusion (PLIF) procedure using a cortical bone implant, the implant insertion being achieved by impacting it into the disc space. The implant is cut from a human donor femur taking advantages of the load bearing structure and the given geometry of the femur bone. The versatile instrumentation design provides with a large variety of solutions for a PLIF surgery in terms of 1). Nerve root retraction, 2). Disc distraction and lordosis restoration, 3). Endplate preparation. A special inserter is designed for implant holding and insertion.</p> <p>2. Advantages of this invention over what was done before and problems solved:</p> <p>Increased safety by reducing posterior exposure to the disc and as a consequence reducing manipulation on the spinal neuro-structure. More efficient and reliable nerve root retraction and protection. More efficient and precise disc space restoration and endplate preparation. The implant design allows an optimal donor bone yield. The implant inserter provides with an X-ray marking for assessing intra-operatively the implant positioning.</p> <p>3. Describe your idea on attached sheets, providing whatever drawings or other sketches are necessary to completely describe the idea. Copies of engineering notebook sheets may be provided. All addendum sheets must be signed, witnessed and dated.</p> <p>See attached sheets.</p>					
Inventor (Print/Type) <b>Charles L. Branch, M.D.</b> Address: <b>10 BOX 320 ADVANCE, NC 27006</b> Citizenship: <b>USA</b> Signature: <i>[Signature]</i> Date: <i>[REDACTED]</i>			Witness (Print/Type) <b>BRADLEY T. ESTES</b> Read, Witnessed and Understood Signature: <i>[Signature]</i>		
Inventor <b>Mingyan Liu</b> Address: <b>41, rue de la Fontaine Grelot 92340 Bourg-la-Reine, France</b> Citizenship: <b>Chinese</b> Signature: <i>[Signature]</i> Date: <i>[REDACTED]</i>			Witness (Print/Type) <b>Debra Jourdan</b> Read, Witnessed and Understood Signature: <i>[Signature]</i>		
Inventor <b>Lawrence M. Boyd</b> Address: <b>688 S. McLean Blvd Memphis, TN 38104</b> Citizenship: <b>U.S.</b> Signature: <i>[Signature]</i> Date: <i>[REDACTED]</i>					
Inventor <b>Loic Josse</b> Address: <b>13 LA PLANA 115700 PALAUA FRANCE</b> Citizenship: <b>FRANCE</b> Signature: <i>[Signature]</i> Date: <i>[REDACTED]</i>					



# INVENTION DISCLOSURE

Disclosure No. 00014

Project No. \_\_\_\_\_

Sheet 2 of 23

List patents, publications and products which you are aware of and which preceded your invention.

Related products:

Brantigan PLIF implant and instrumentation (AcroMed).

Ogival cage (Stryker)

Contact cage (Synthes)

Inventor Charles L. Branch

Date

Read, Witnessed and Understood

Inventor Mingyan Liu

Date

Read, Witnessed and Understood

Inventor Lawrence M. Boyd

Date

Inventor Loic Josse

Date



**INVENTION DISCLOSURE**

Disclosure No. 00014

Project No. \_\_\_\_\_

Sheet 3 of 23

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**Drawings and Description of Idea**

See attached drawings.

_____ Inventor Charles L. Branch	_____ Date	_____ Read, Witnessed and Understood
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_____ Inventor Mingyan Liu	_____ Date	_____ Read, Witnessed and Understood
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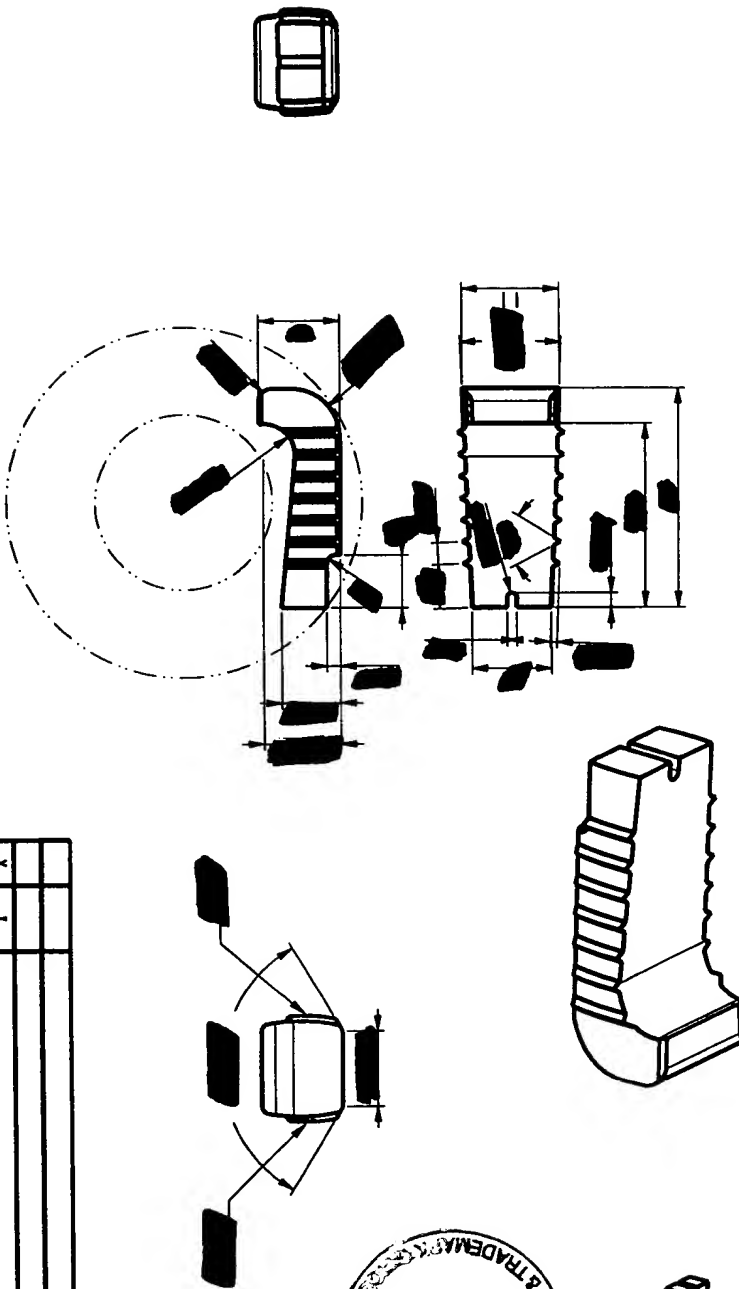
_____ Inventor Lawrence M. Boyd	_____ Date
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_____ Inventor Loic Josse	_____ Date
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4123

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REV	DESCRIPTION	DATE	BY
A	INITIAL RELEASE	1	X



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SCALE 1,000

## FINAL DRAWING

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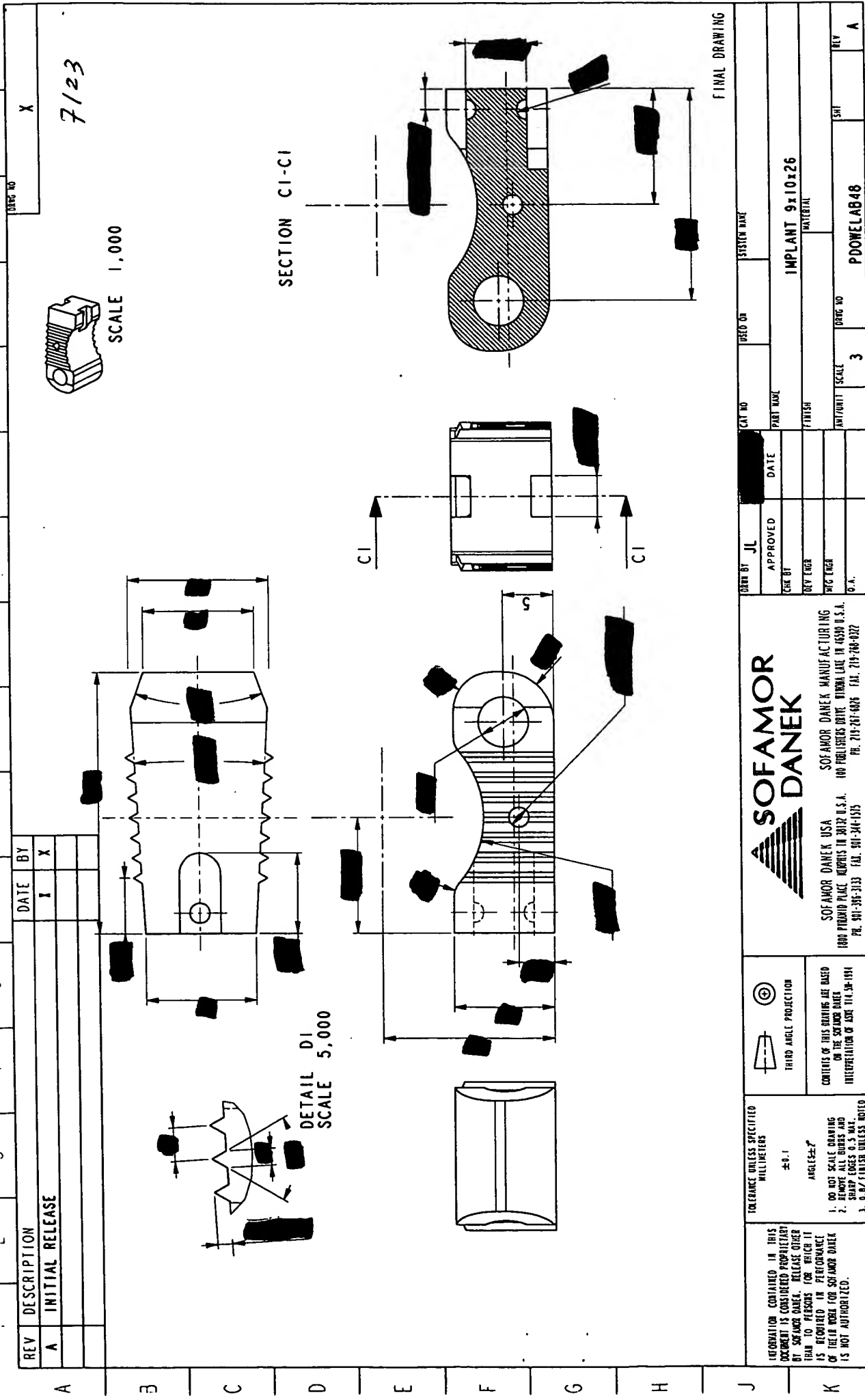
5/23

## FINAL DRAWING

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WFG ENGR			
D.A.			

CITY NO	USED ON	SYSTEM NAME

PART NAME	IMPLANT 9x10x26
MATERIAL	
FINISH	
AMOUNT SCALE	3
DRUG NO	PDOWELAB48
REV	A

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1000 PLEASANT PLACE, KENNESHA, IN 46530 U.S.A.  
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Bone implant, 2nd Version

8123

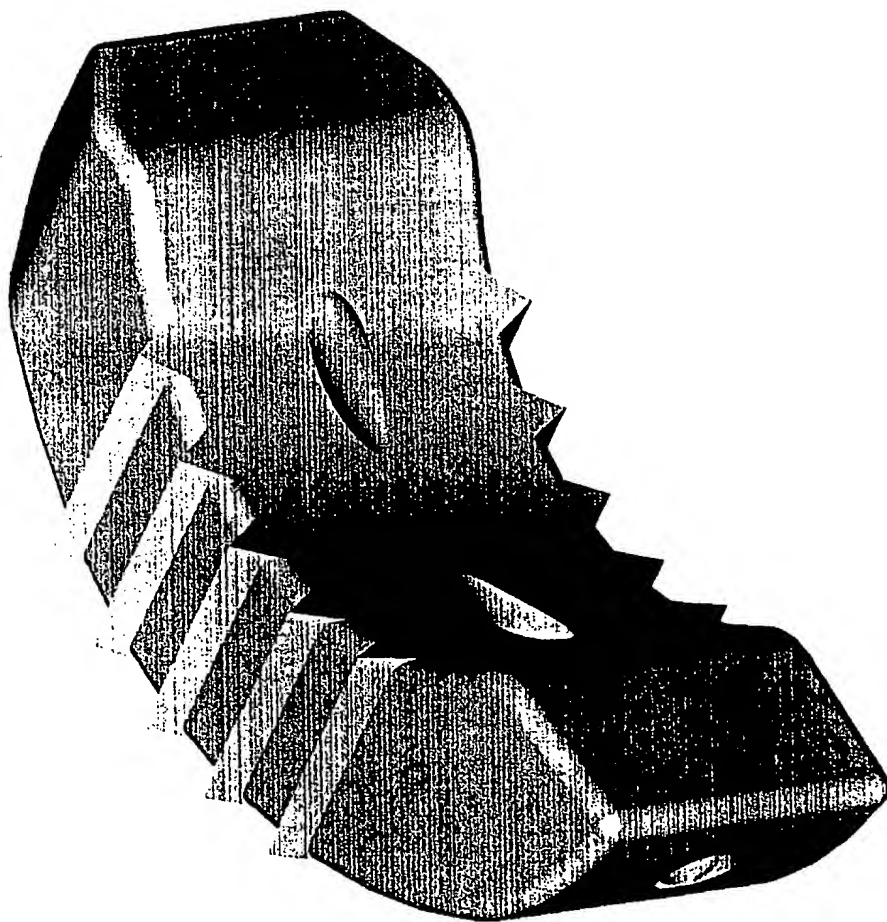
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Bone Implant, 3rd Version

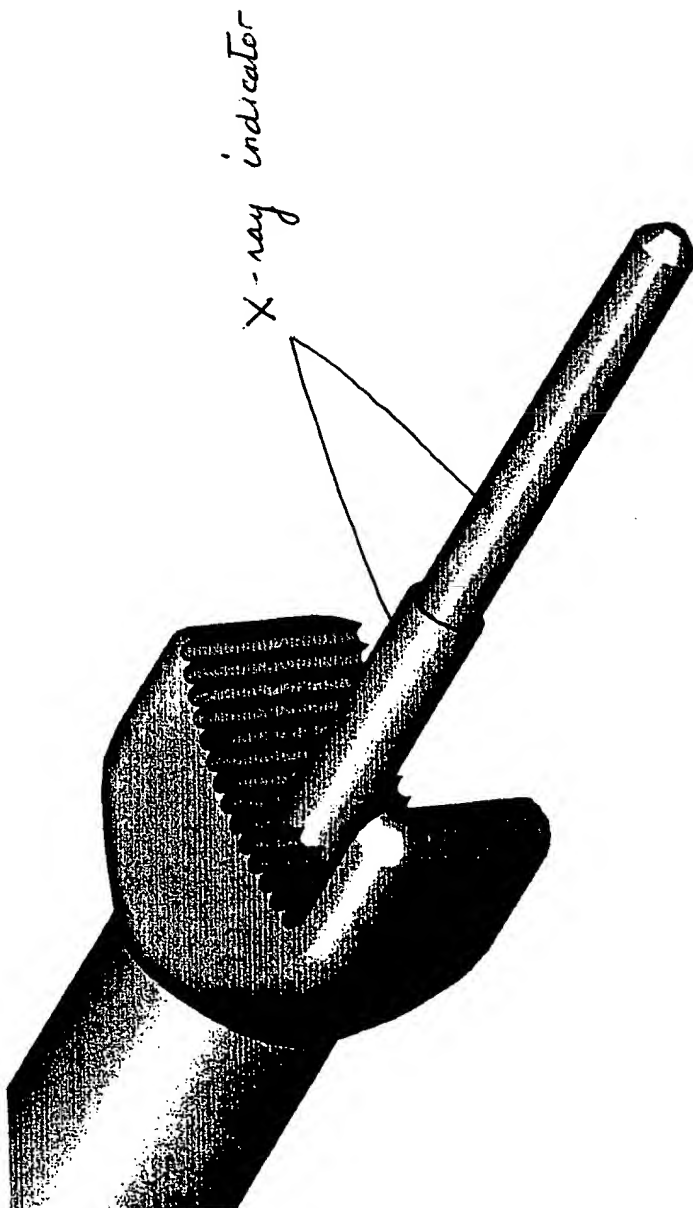
cut from a human donor femur



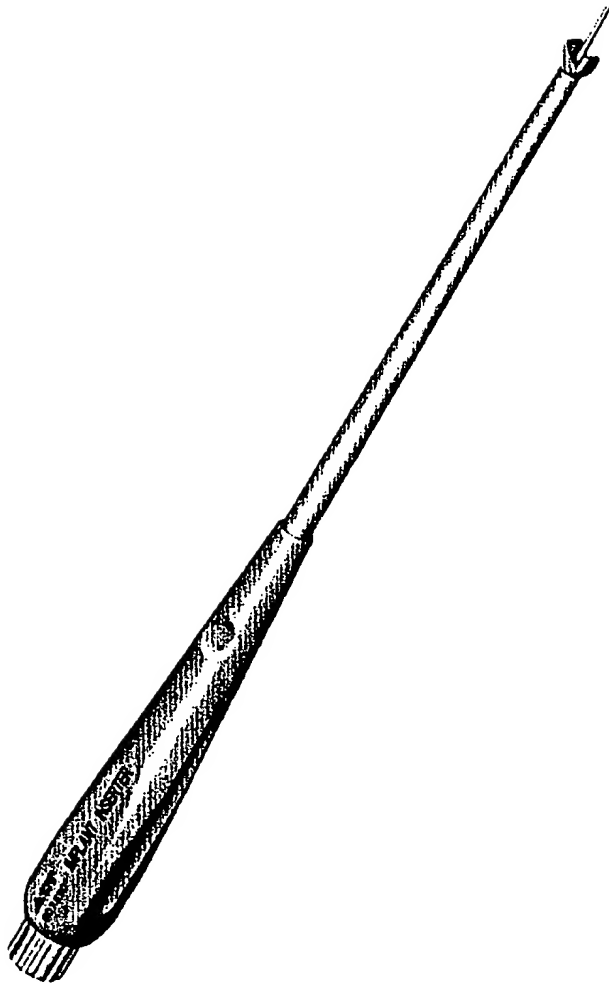
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Implant Holding System. 3rd Version



Implant Insertion, 3rd Version



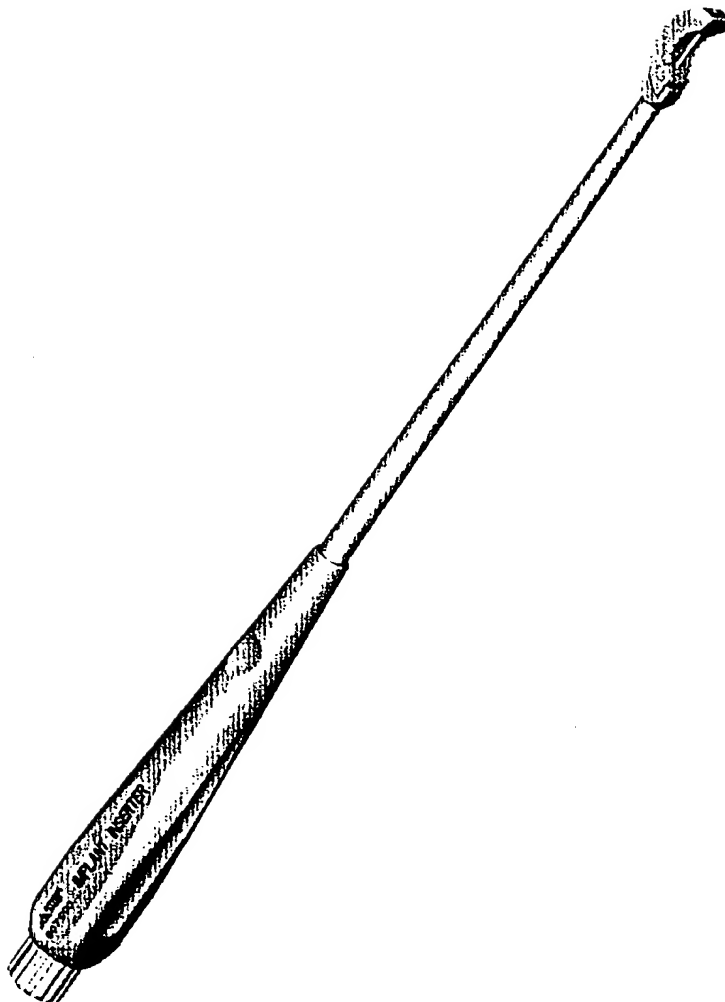
6449

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Implant holding



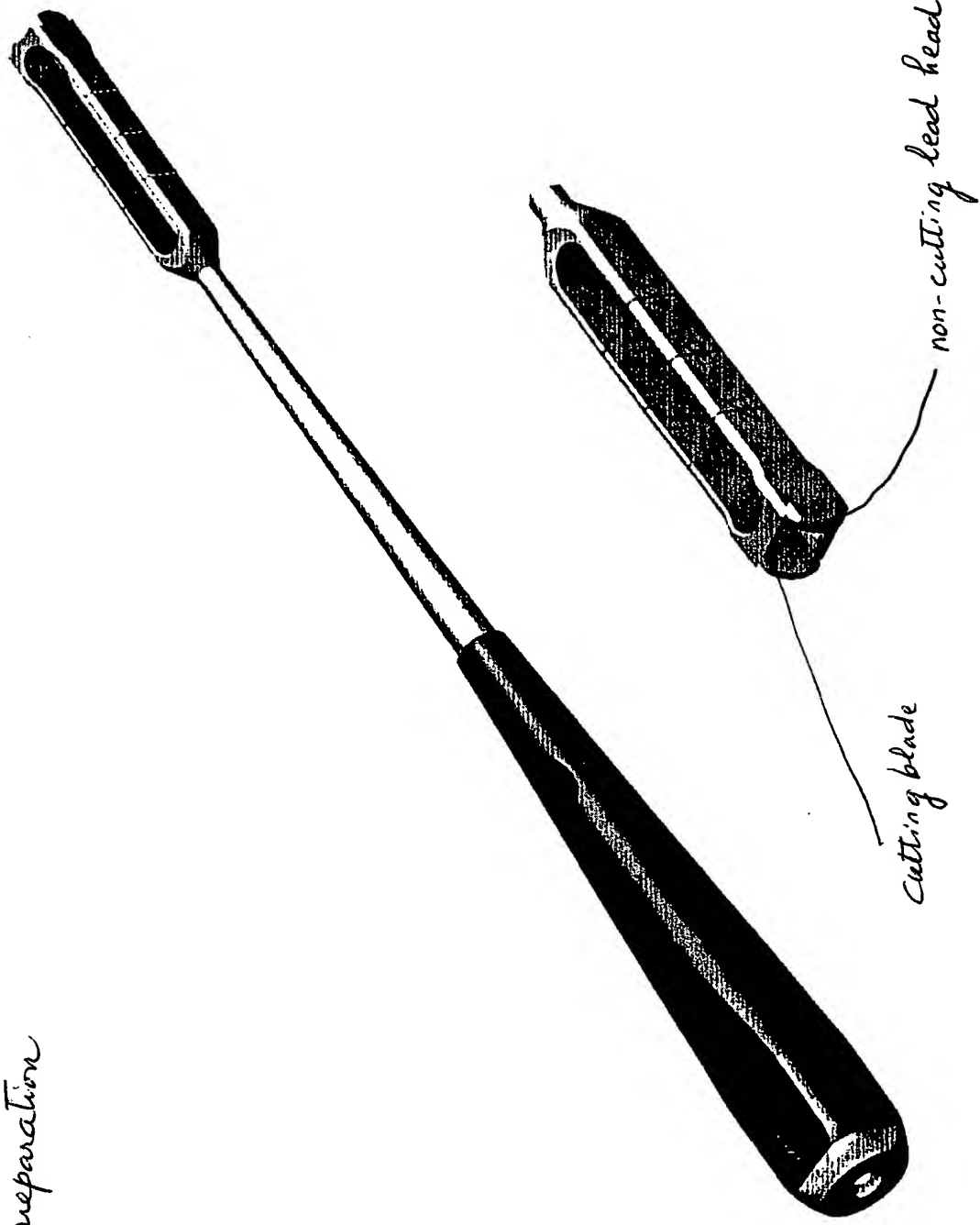


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Box chisel

implant specific instrument  
for endplate preparation

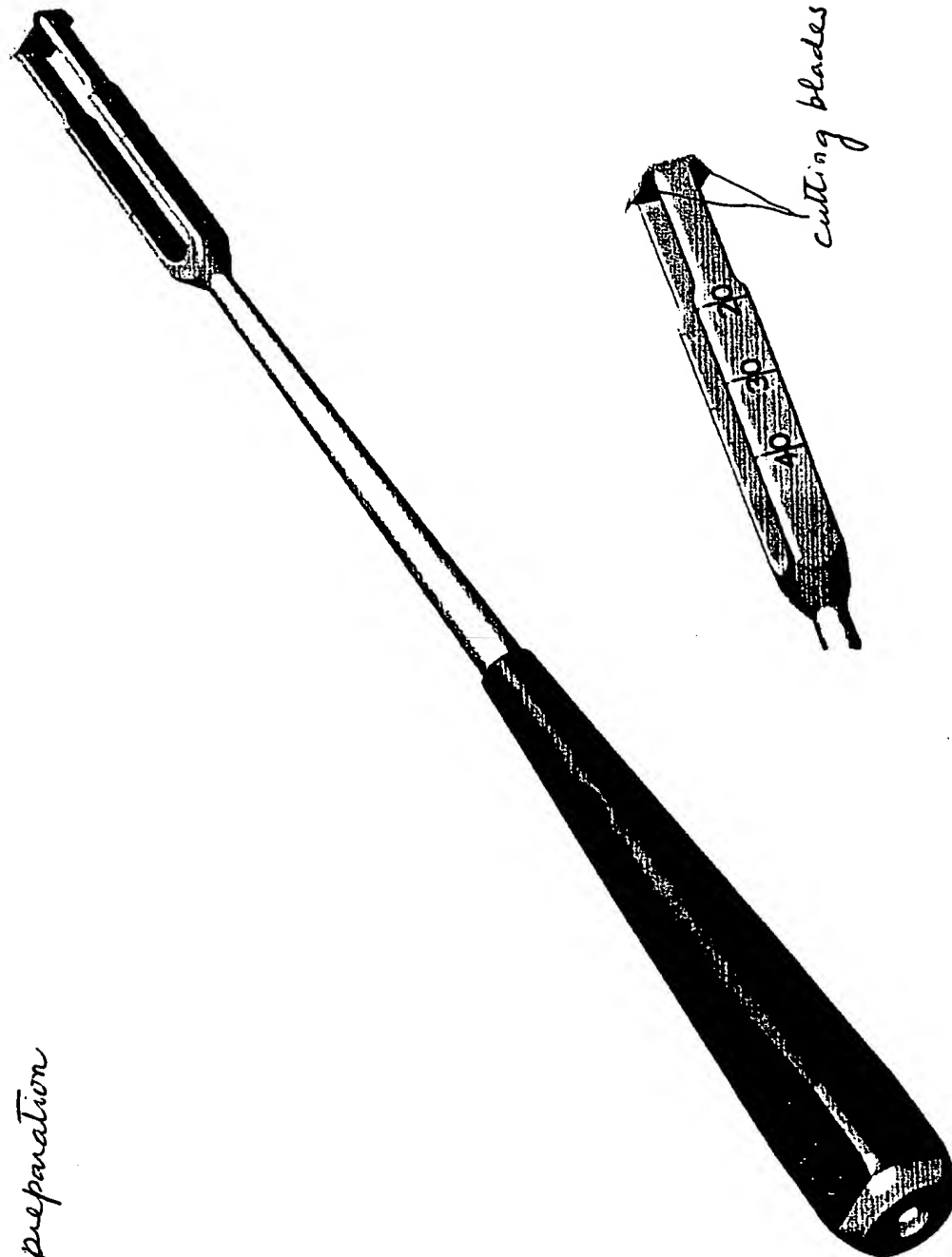


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Shaver

implant specific instrument  
for endplate preparation

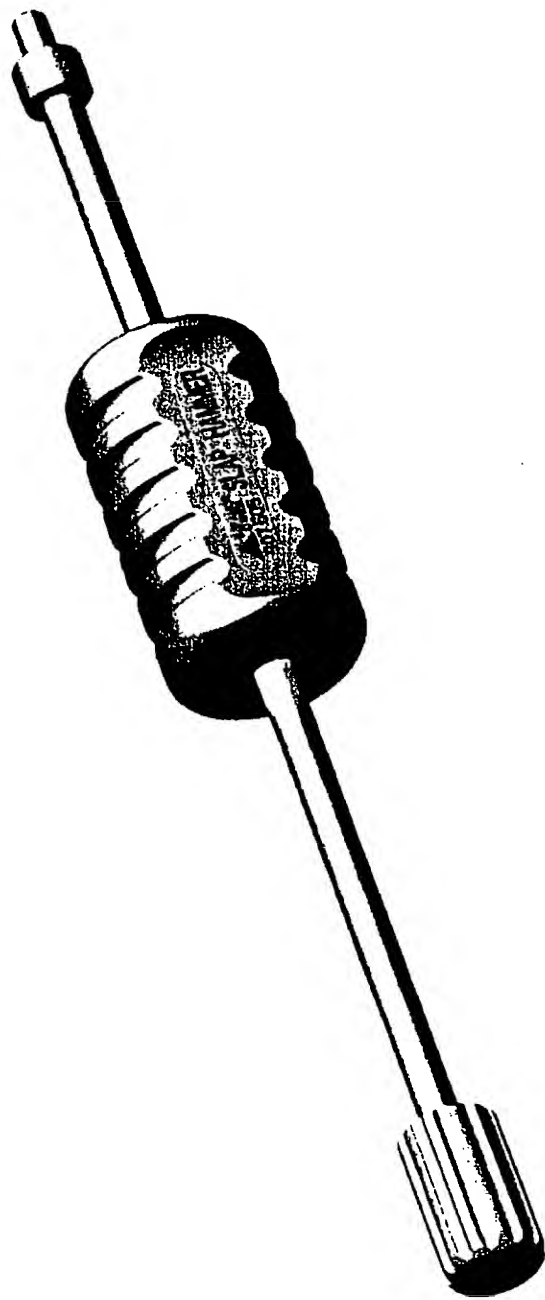


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Slap-hammer

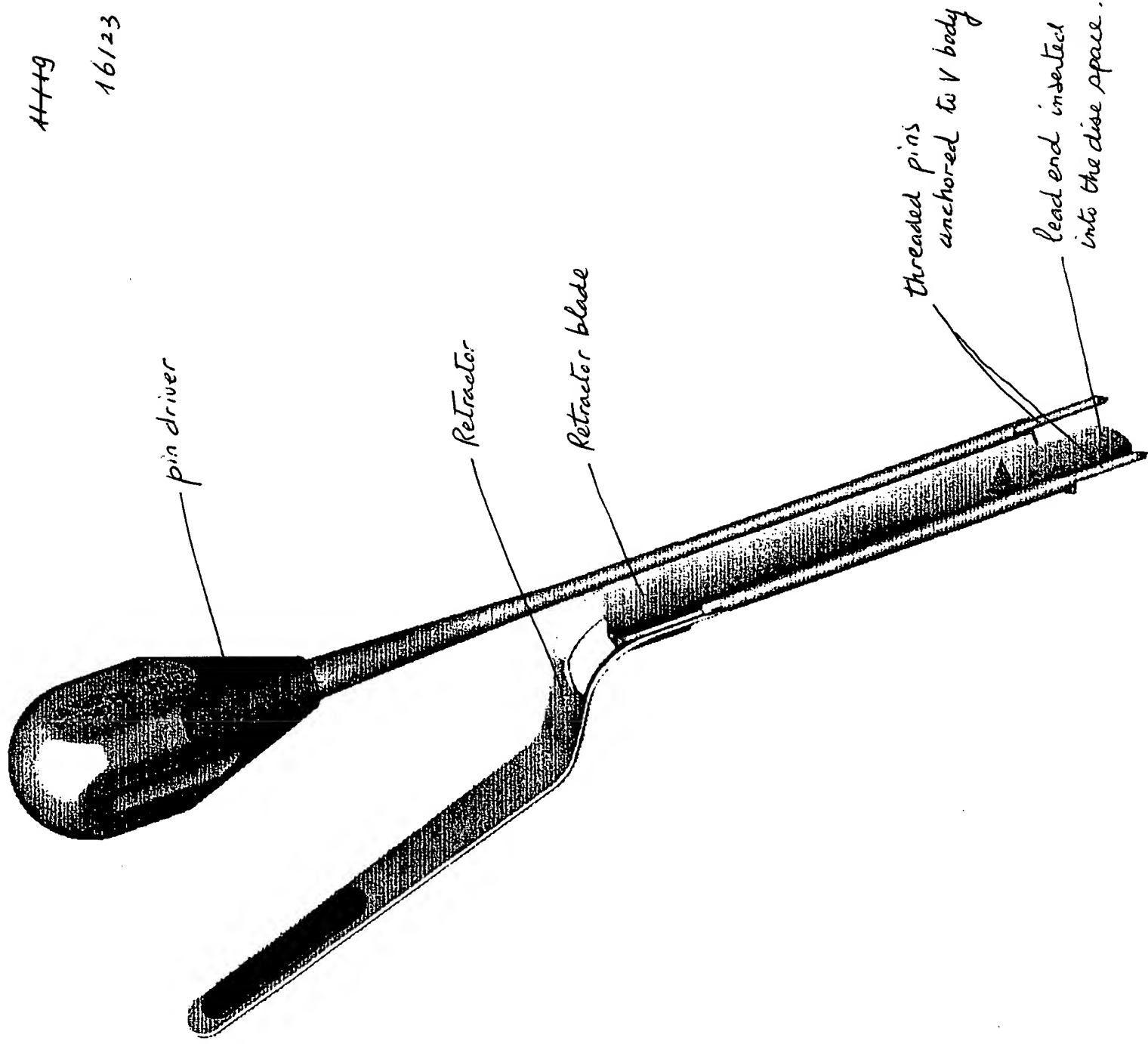
for endplate cutter extraction



# Nerve Root Retractor

HHH9

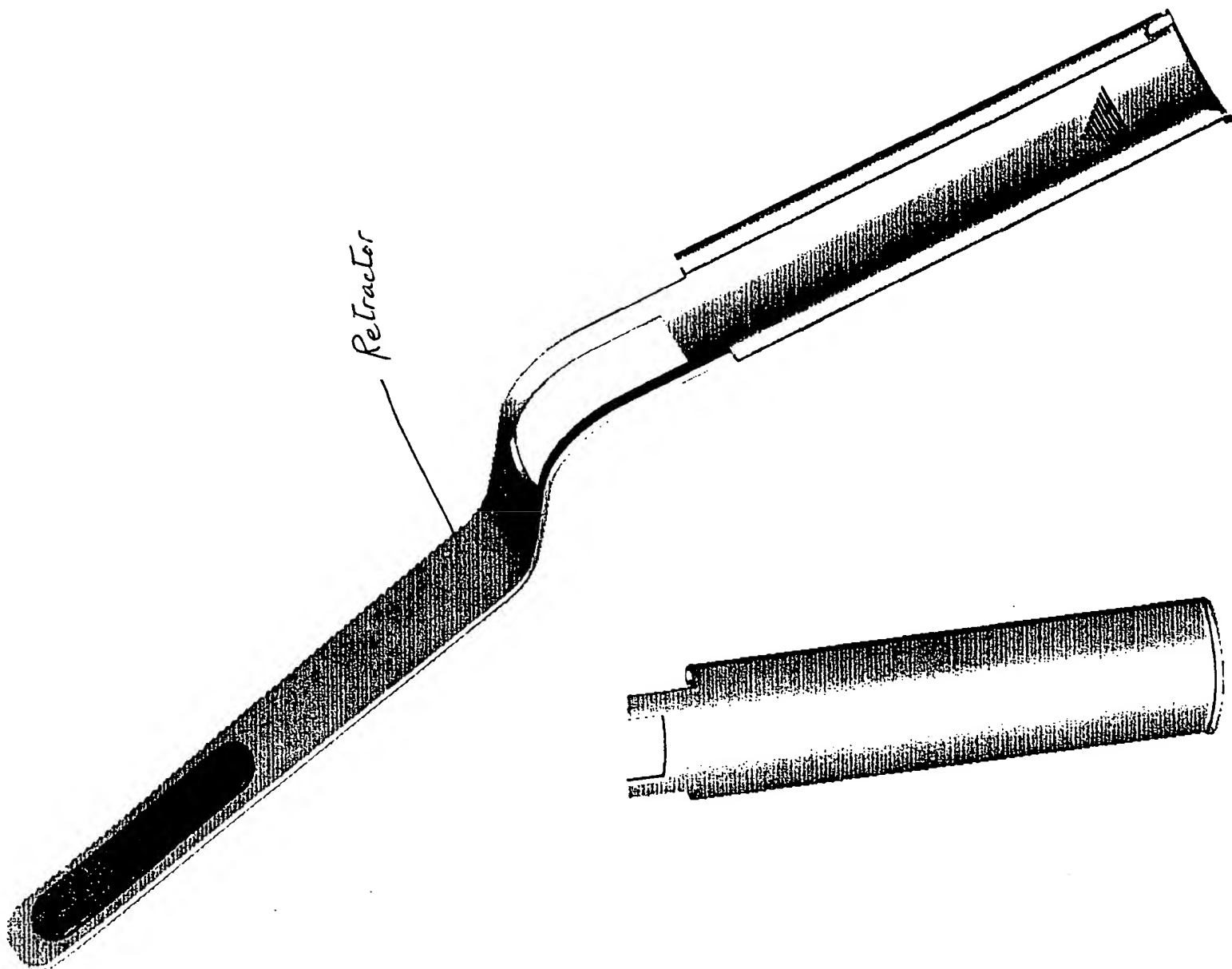
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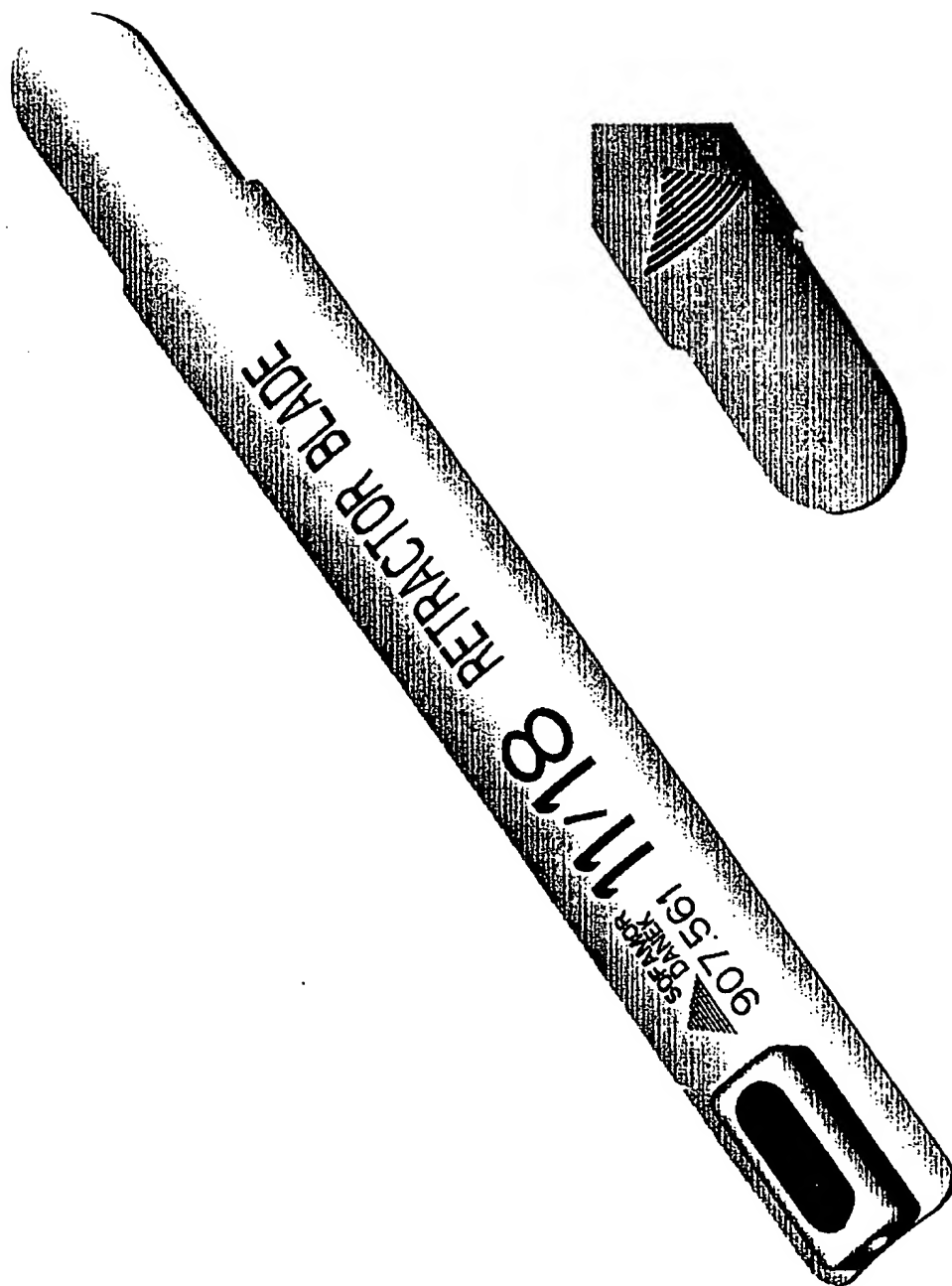


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Retractor





Retractor Blade

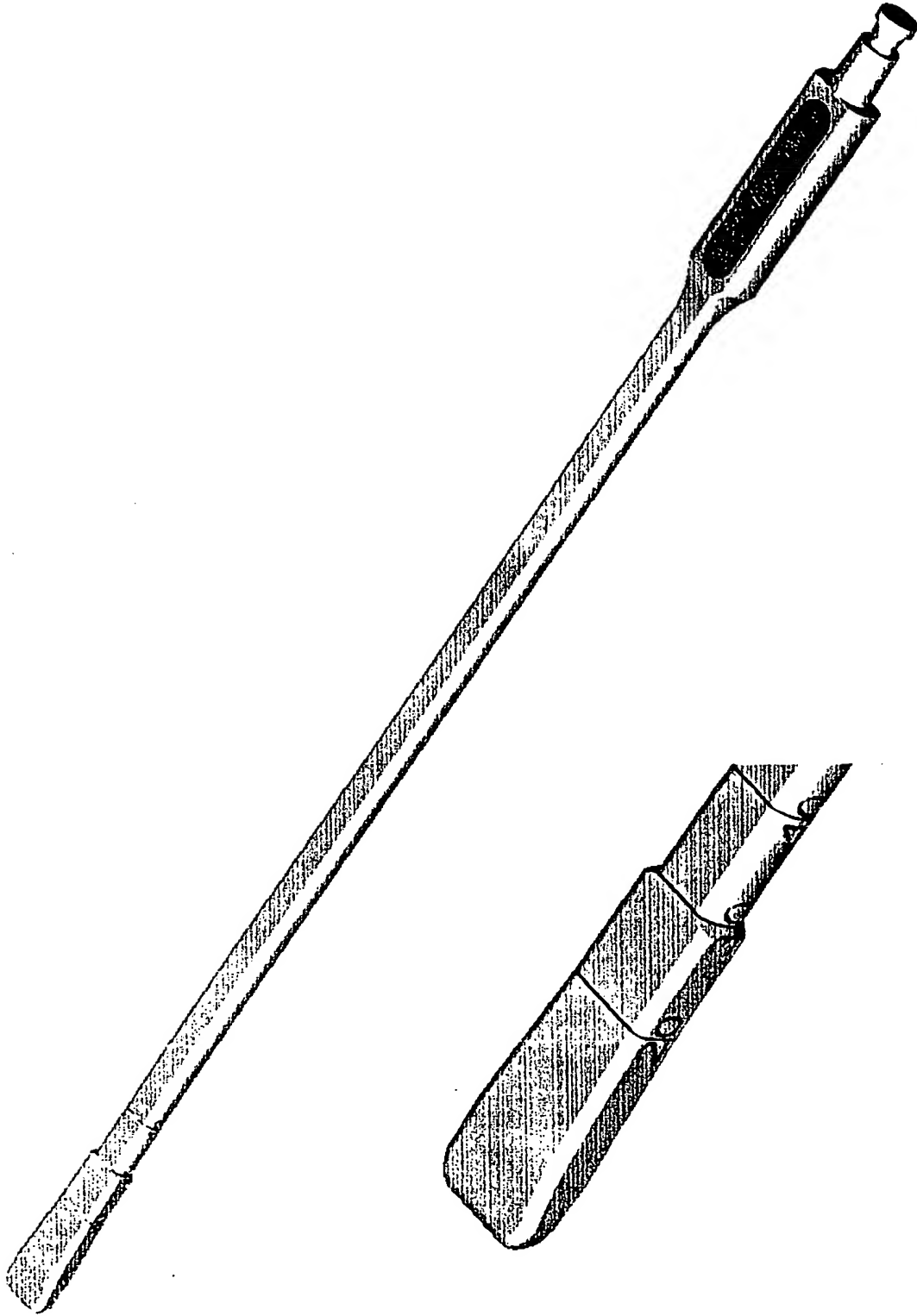
13774

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Disc distractor (turn-notate)

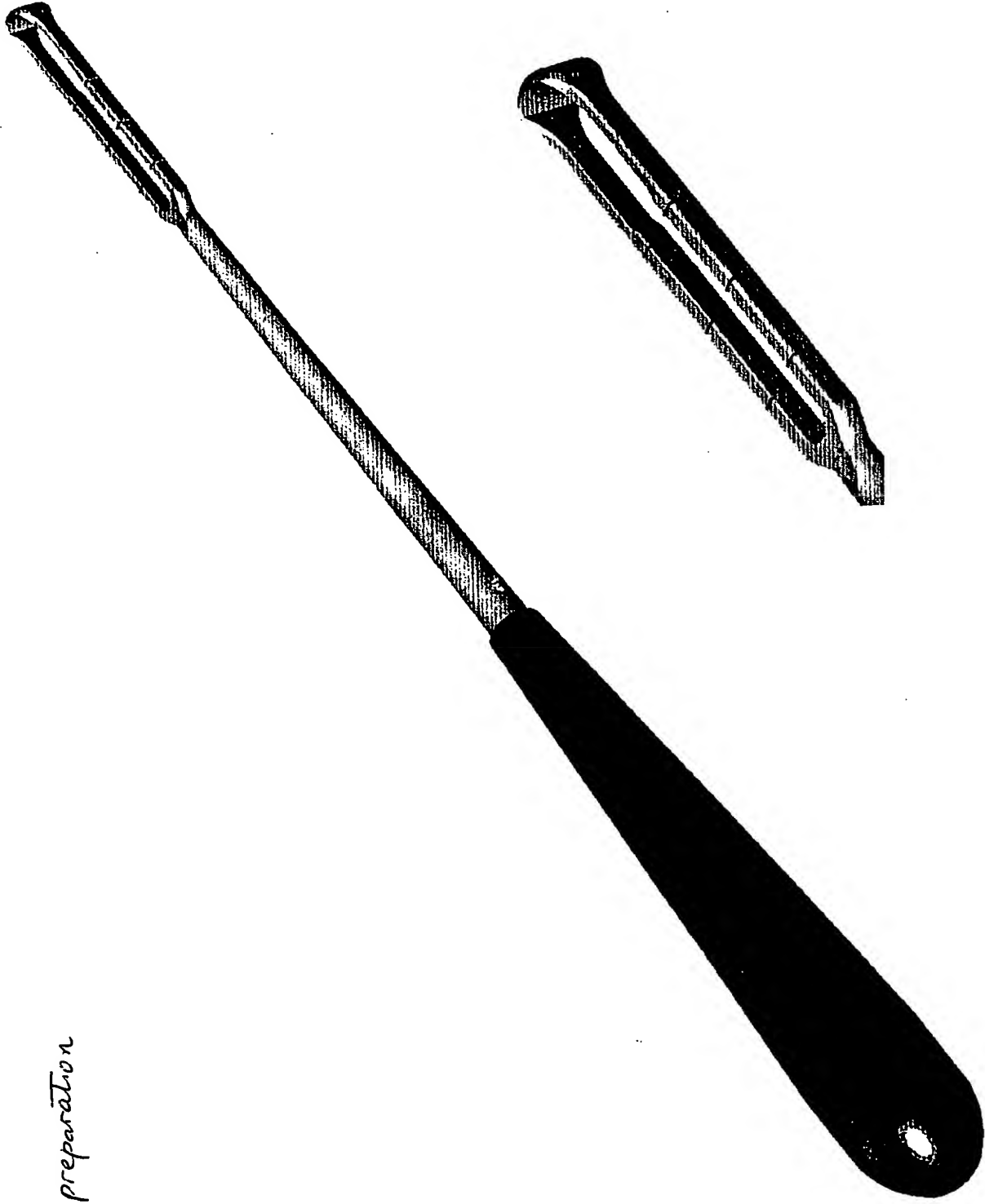


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Round Scraper

End plate preparation

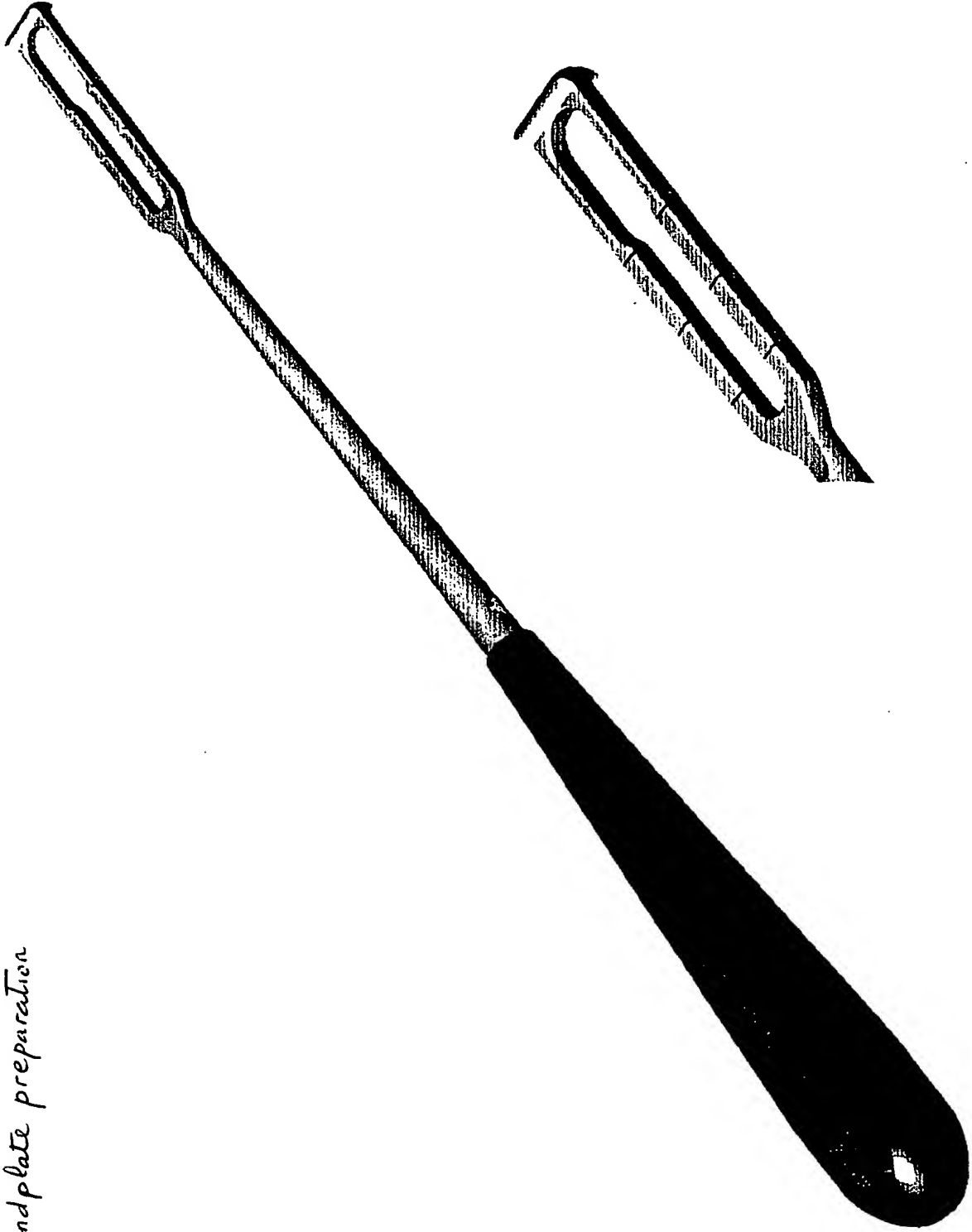




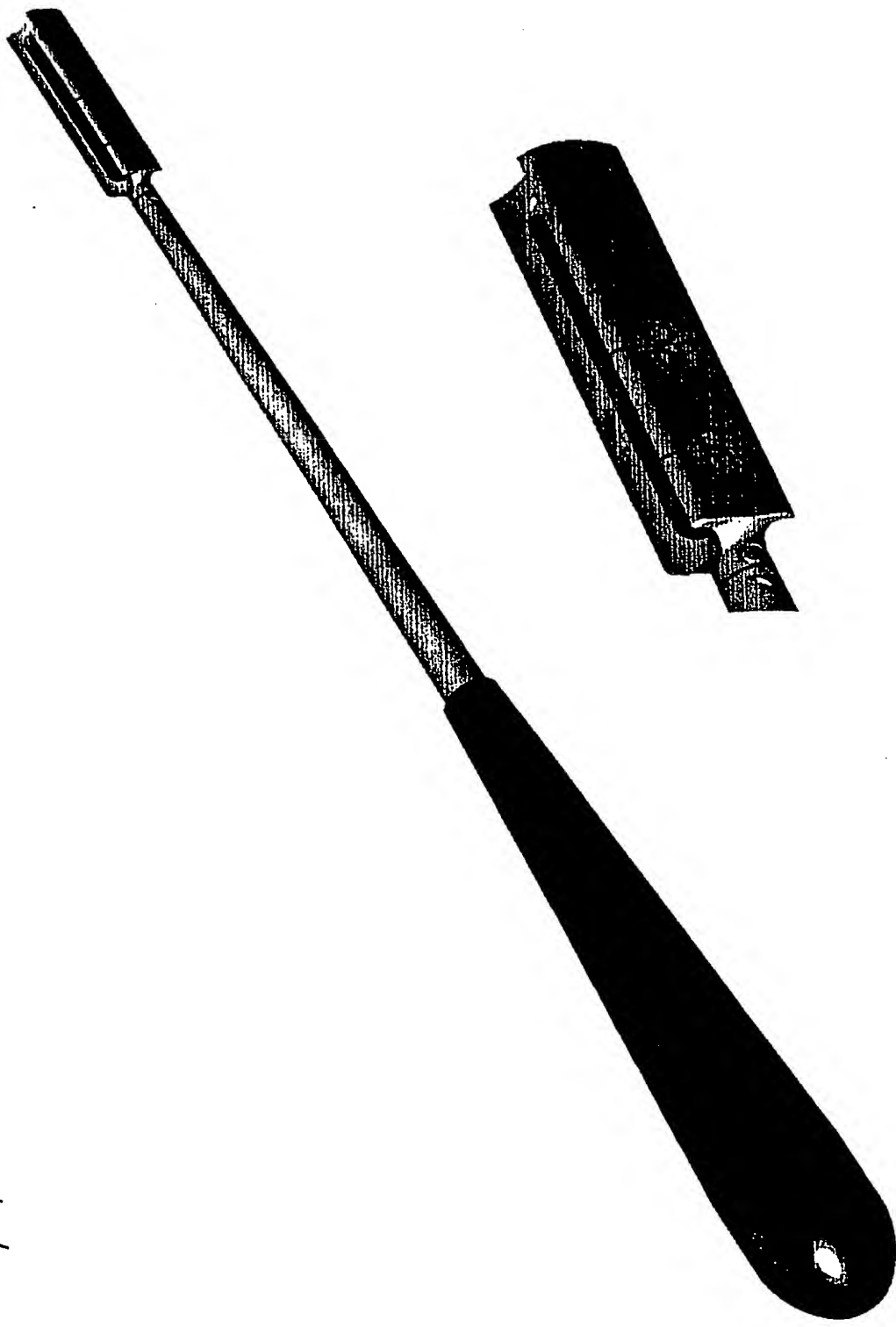
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Plane Scraper  
for end plate preparation



Rotate cutter  
for endplate preparation



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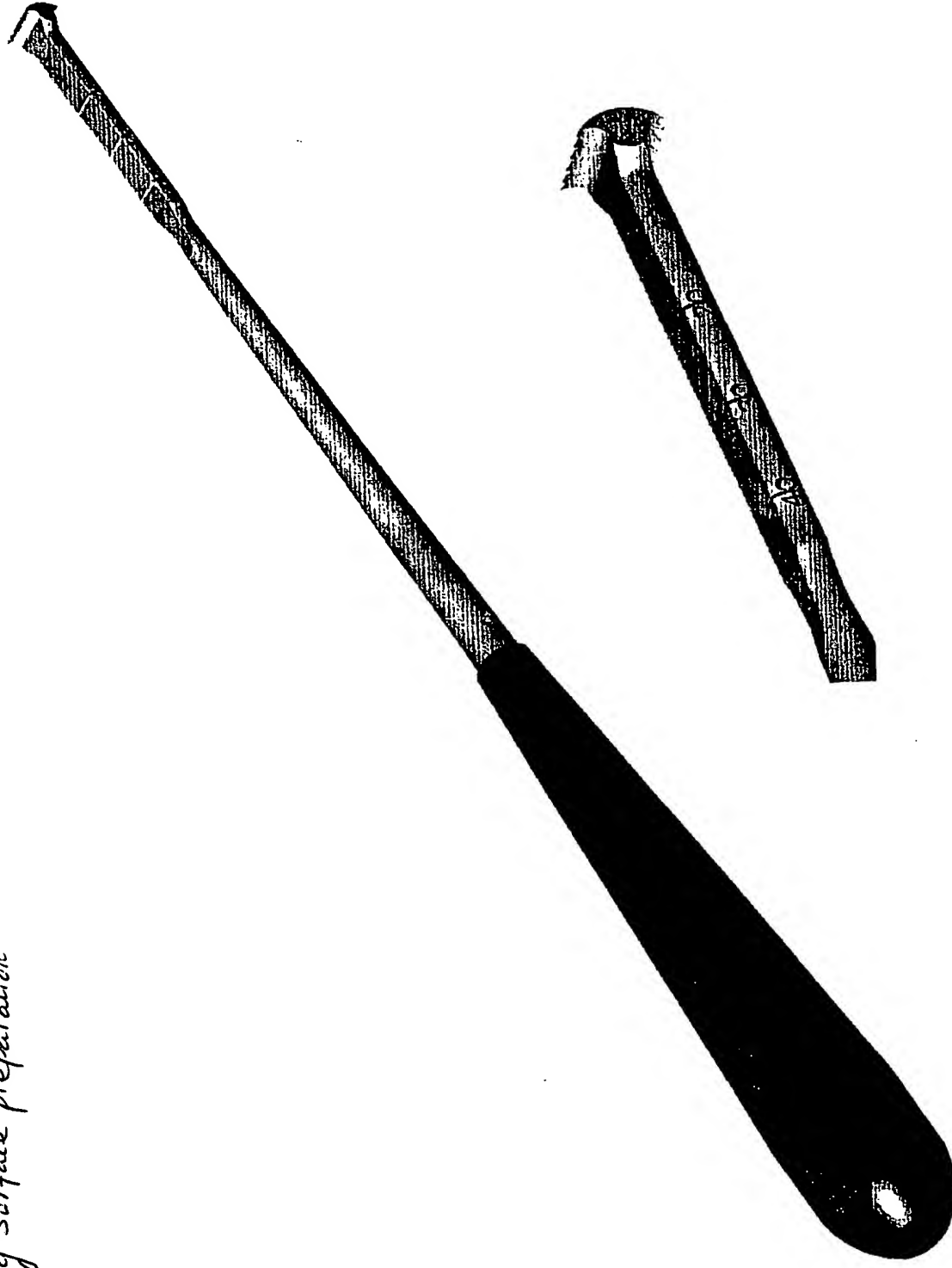
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Toothed Scraper

for bleeding surface preparation

1944g

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